

#### ABSTRACT OF THE DISCLOSURE

A porous MSQ is formed on a silicon substrate, and an SiC mask is formed thereon. Plasma etching using the SiC mask as a mask is  
5 performed to form a trench in the porous MSQ. A fluorinated polyxylilene film is formed on the entire surface of the substrate  
1 including the side surfaces of the trench, and the unnecessary fluorinated polyxylilene film formed on the area other than the side surfaces of the trench is removed. A barrier-metal film and a seed  
10 Cu layer are formed in the trench and a Cu is deposited.